

REMARKS

I. Introduction

Claims 16, and 19 to 31 are pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Rejections Based on U.S. Patent No. 6,267,307

As an initial matter, Applicants respectfully disagree with the assertions appearing on page 4 of the Final Office Action that U.S. Patent No. 6,267,307 constitutes prior art against the present application. The publication date of PCT/FR98/02668 is entirely **irrelevant** to whether U.S. Patent No. 6,267,307 constitutes prior art against the present application. As stated on the face of U.S. Patent No. 6,267,307, June 8, 2000 is its 35 U.S.C. § 102(e) date and its 35 U.S.C. § 371 date. U.S. Patent No. 6,267,307 has absolutely no prior art effect before the June 8, 2000 date. Withdrawal of all rejections based on U.S. Patent No. 6,267,307 is therefore respectfully requested.

III. Rejection of Claims 16, and 19 to 21 under 35 U.S.C. § 103(a)

Claims 16, and 19 to 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al. (U.S. Patent No. 6,161,781), Romann et al. (U.S. Patent No. 5,335,864), and Pontoppidan (U.S. Patent No. 6,267,307). It is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable the present claims for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). In addition, as clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. See KSR Int’l Co. v. Teleflex, Inc., 127 S. Ct. 1727 (2007). Further, the Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. M.P.E.P. §2143.

Claim 16 recites a fuel injector including, *inter alia*, a downstream valve end including an outlet component and a fuel outlet, in which the fuel outlet includes at least one

discharge orifice of the outlet component, and in which *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*.

In contrast, Kojima et al. do not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, as provided for in the context of claim 16. Instead, Kojima et al. seek to provide a uniform, symmetrical, flat fan-shaped spray over an angle Θ . (Kojima et al., col. 1, line 64 to col. 2, line 20; col. 9, lines 19 to 22; col. 10, lines 41 to 44; and col. 12, lines 1 to 5). In this regard, Kojima et al. merely indicate a rectangular slit injection hole to produce the uniform, symmetrical, flat fan-shaped spray. (Kojima et al., col. 8, lines 44 to 46; col. 9, lines 60 to 64; col. 11, lines 15 to 19; and Figures 8 to 13). Therefore, Kojima et al. do not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, as provided for in the context of claim 16.

In addition, Romann et al. do not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, as provided for in the context of claim 16. Instead, Romann et al. merely indicate a metallic perforated disc 22 having spray orifices 37, in which the disc 22 is 0.1mm thick. (Romann et al., col. 2, lines 15 to 18; and Figure). Therefore, Romann et al. do not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, as provided for in the context of claim 16.

Independent of the above, even assuming that Romann et al. indicate this claimed feature of claim 16, which is not conceded by the Applicants, it is respectfully submitted that there is no motivation or suggestion to combine Kojima et al. and Romann et al. As more fully set forth above, Kojima et al. specifically seek to provide a uniform, symmetrical, flat fan-shaped spray. Accordingly, there is no motivation to combine Kojima et al. and Romann et al. since such a combination with the distinct spray orifices of Romann et al. would completely vitiate the stated intended purpose of Kojima et al. Thus, the proposed modification would render the device described by Kojima et al. unsatisfactory for its intended purpose and/or change the principle of operation of the device described by Kojima et al. As such, there is no motivation to make the proposed modification for this additional reason. In re Gordon, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984) (there is no suggestion or motivation to make a proposed modification if the proposed modification would render the prior art device being modified unsatisfactory for its intended purpose); In

re Ratti, 270 F.2d 810, 123 U.S.P.Q. 349 (C.C.P.A. 1959) (the disclosures of references are not sufficient to render claims prima facie obvious if the proposed modification or combination would change the principle of operation of the prior art device being modified).

Further, Pontoppidan also does not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, as provided for in the context of claim 16.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, all of the features included in claim 16. Therefore, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable claim 16 for at least the foregoing reasons.

Thus, as for claims 19 to 21, which depend from and therefore include all of the features included in claim 16, it is respectfully submitted that the combination of Kojima et al., Romann et al., and Pontoppidan does not render unpatentable these dependent claims for at least the reasons more fully set forth above.

Withdrawal of this rejection is therefore respectfully requested.

IV. Rejection of Claims 22 to 25 under 35 U.S.C. § 103(a)

Claims 22 to 25 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. (Soviet Union Published Patent Application No. 775364B). It is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. does not render unpatentable the present claims for at least the following reasons.

Claims 22 to 25 ultimately depend from claim 16. As more fully set forth above, the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*. Fedorovich et al. also do not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*, and thus, fail to cure this critical deficiency.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Fedorovich et al. does not disclose, or even suggest, all of the features included in claim 16, from which claims 22 to 25 ultimately depend. As such, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan,

and Fedorovich et al. does not render unpatentable claims 22 to 25, which ultimately depend from claim 16. In this regard, Fedorovich et al. merely relate to coating.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

V. Rejection of Claims 26 to 31 under 35 U.S.C. § 103(a)

Claims 26 to 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi (U.S. Patent No. 6,205,983). It is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not render unpatentable the present claims for at least the following reasons.

Claims 26 to 31 ultimately depend from claim 16. As more fully set forth above, the combination of Kojima et al., Romann et al., and Pontoppidan does not disclose, or even suggest, the feature that *the discharge orifice of the outlet component is inclined at an angle relative to the longitudinal axis of the valve*. Egizi merely indicates two spray shaping passages 34, 36 that provide a targeted split stream spray pattern. (Egizi, col. 3, lines 1 to 3 (emphasis added)). As more fully set forth above, it is respectfully submitted that there is no motivation or suggestion to combine Kojima et al. and Egizi because Kojima et al. specifically seek to provide a uniform, symmetrical, flat fan-shaped spray. Accordingly, there is no motivation to combine Kojima et al. and Egizi since such a combination would completely vitiate the stated intended purpose of Kojima et al. Thus, the proposed modification would render the device described by Kojima et al. unsatisfactory for its intended purpose and/or change the principle of operation of the device described by Kojima et al. As such, there is no motivation to make the proposed modification.

Accordingly, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not disclose, or even suggest, all of the features included in claim 16, from which claims 26 to 31 ultimately depend. As such, it is respectfully submitted that the combination of Kojima et al., Romann et al., Pontoppidan, and Egizi does not render unpatentable claims 26 to 31, which ultimately depend from claim 16.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

VI. Conclusion

It is therefore respectfully submitted that all of the presently pending claims 16, and 19 to 31 are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

Dated: November 7, 2008

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